Examples of Open Source Software in USAID and DoS

Real World E-gov Solutions

in

International Development

December 10, 2002

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dev is
Development
InfoStructure

Perspective: IT <u>Services</u> Provider

- Design, develop, host, and operate custom internetworking applications
- US Federal Clients include:
  - Department of State
  - Department of Labor
  - General Services Administration (GSA)
  - US Agency for International Development
  - National Center for Health Statistics
- UN Agencies, private consulting firms
- Provide services in over 50 countries
- Jordan – USAID Grant to local IT Assoc. for first OSS conference in Amman - Dec. 15/16, 2002

Outsourced Systems – <u>Primarily</u> OSS

- Federal Applications Built Using <u>Primarily</u> OSS
  - Department of State – Federal Exchanges Database: Report international exchanges – <u>all</u> Federal Agencies
  - Department of Labor – Workforce Connections: Just-in-time Web knowledge publishing and dynamic review
  - GSA – Acquisition Career MIS - all Federal Procurement Officers
  - USAID – Worldwide use: TraiNet International training monitoring w/INS VISA control interface; Development Credit (loan status) monitoring with partner banks

- Public Sites (Most applications above are secure):
  - http://www.disabilityinfo.gov
  - http://trainet.usaid.org
  - http://www.milspouse.org

3 Applications – International

- Distributed data collection – track $100 Millions
- Secure / private – not public Web sites
- Department of State
  - 1999 Federal Exchanges Database
  - IAWG (InterAgency Working Group on US Government Sponsored International Exchanges and Training)
- USAID
  - 2001 TraiNet (Training Results and Info. Network)
  - 2002 CMS (Credit Management System)
  - Technical Support: M/IRM
  - Program Office Sponsors: EGAT/HCD and EGAT/DC

3 Architectures: One Size <> Fit All

- Mostly Open Source Software – minimal proprietary tools / practical approach
- Address various "real world" connectivity issues
    - From high speed to no speed
- Each has a different architecture
    - Web browser – classic Web forms - HTTPS/HTML
    - Fat client – real time (Web service) - HTTP/XML
        - Local installation /app. auto-updates / data real time XML
    - Federated – messaging (Web service) - HTTP/XML
        - Distributed LAN / Web XML Messaging

- Summarizes US sponsored international exchanges
  - US Citizens to overseas
  - Exchange visitors to the US
- All Federal Agencies Report – summary (no names)
- Java Application – "Fat client" – downloaded and installed on local PC/MAC/Linux/UNIX.
- Communicates directly with database server using XML formatted data – treated as a Web service
- High performance – only XML data transferred – interface and some look-up tables stored locally
- Local application – no need to "render" pages

FEDS/www

File   Edit   View   Administration   Help

Fulbright-Hays Doctoral Dissertation Research Abroad Program

Information | **Categories** | **National Interests** | **Notes** | **Summary** | **Contacts** | **Staff Notes** | **Report Caveat Notes**

Tree (left panel)

- Department of Agriculture
- Department of Commerce
- Department of Defense
- Department of Education
  - Office for Civil Rights
  - Office of Bilingual Education and Minority Languages Affairs
  - Office of Educational Research and Improvement
  - Office of Elementary and Secondary Education
  - Office of Postsecondary Education
    - American Overseas Research Centers Program
    - European Community-U.S.A Joint Consortia for Cooperation in Higher Education and Vocational Education Program
    - Fulbright-Hays Doctoral Dissertation Research Abroad Program
      - 1998
      - 1999
      - 2000
      - 2001
    - Fulbright-Hays Faculty Research Abroad Program
    - Fulbright-Hays Group

Section 1

All or a major portion of the program/activity is:

- ☑ Academic

  If academic, which of the following best describes the academic level of the program/activity?

  [Elementary School ▼]   If other, specify: [   ]

- ☑ Designed to impart professional and/or practical experience
- ☐ Designed as an observation experience or study tour
- ☑ Research (both academic and non-academic)

If you did not check any of the above, provide a brief characterization of the nature of the program:

[   ]

Section 2

If the program/activity falls under one or more of the following specialized categories, check all that apply:

- ☐ Scientific
- ☐ Defense/Military
- ☑ Cultural
- ☐ Rule of Law (including Law Enforcement and Administration of Justice)
- ☐ International Visitor Briefings/Tours

Feds/hq

TraiNet2

- Plan and monitor details of training programs that happen in a host country or third country
  - Purpose of training / results
  - Estimated cost / dates / logistics
- USAID Missions and hundreds of contractors and grantees in over 50 countries – distributed via CD
- "Federated" application installed locally – Borland Delphi to MS Access database – multi-user on LAN
- Shares data between sites and <u>repository</u> via messaging
- Local control/ownership – no high speed Internet access required
- Web-based workflow interface for US Visa approval / secure linkages w/INS visa control systems

Create a Training Program

Training Program Wizard

A Training Program is a learning activity designed to improve the performance of participants by developing knowledge, skills, or attitudes. Training programs are funded separately from technical assistance.

Long-term degree programs, non-degree technical training, seminars, conferences, workshops, and study tours are just a few

Instructions (* Indicates required data entry)

* 1   Select the Activity that will fund this training.
* 2   Enter a Name for this training program. The name will identify this program in your training reports.
* 3   Select the Training Type. In rare cases you may need to create a new training type by choosing <Add New Item> from the list.
* 4   Select the Training Location. In-Country, Third-Country, or U.S. Training.
* 5   Select the Method of Training. If training takes place in a way other than first hand select Distance Learning (example: On-Line College Course), otherwise select Traditional.

* Activity

* Name

* Training Type

* Training Location

* Method of Training

Cancel   < Back   Next >

CMS

CREDIT MANAGEMENT SYSTEM
The United States Agency for International Development

- Track development credit activities ($s and local)
  - Credit agreements / use of funds
  - Document loss/claim transactions
- USAID, payment agent, and 100s banks worldwide
- Web browser forms used to post data
  - Optional off-line MS Excel/Adobe XML off-line forms
- Dynamically generated screens based on role
  - Bank, Mission, payment agent, HQ, Analyst, SysAdmin
- Allows for direct collection of performance data and eliminates hard copy reports

CMS CREDIT MANAGEMENT SYSTEM
The United States Agency for International Development

- Dynamic Web browser content based on User Role
- CMS delivers appropriate "scope" (add, edit, view, etc.)
- All content is dynamically created for each page
- Business rules control page rendering for different Roles

Headquarter User ->

Bank User below

| Main | Reports | Credit Monitoring | User Management | Offline Forms |

User Management

This section controls authorization and the access rights of each user. A brief user profile is created and stored when new users are authorized. The user profile edited or deleted. Access rights are divided into classes. Authorization to and their roles is permitted only to certain high-level users.
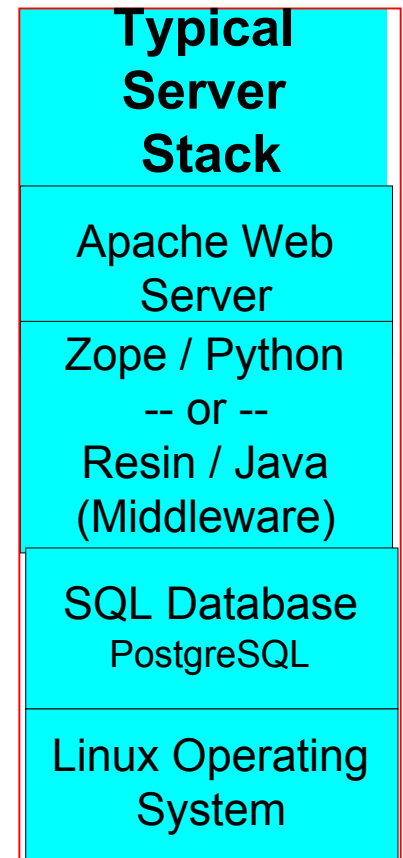
Available Actions

ODC/Staff Users

Intermediate Financial Institution Users

Mission Users

Payment Transfer Agent Users

Special Users

data for

| Main | Credit Monitoring | User Management | Offline Forms |

User Management

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Available Actions

Intermediate Financial Institution Users

3 Applications – OSS "Stack"

- Utilize XML / Standards
- Site uses open source projects:
  - Apache (Web server)
  - Middleware Servers
    - Zope / Python
    - Java / Resin
  - XML Blaster – messaging server
  - HTML/XML/CSS – W3C standards
  - PostgreSQL / MySQL (SQL Database)
  - Linux (OS) / OpenBSD (firewalls)
  - Analog (Web statistics)
  - Intrusion detection/firewalls numerous

Typical Server Stack
Apache Web Server
Zope / Python -- or -- Resin / Java (Middleware)
SQL Database PostgreSQL
Linux Operating System

Benefits for an IT Services Provider / Clients

- Fixed Price Bids – Lower cost initially and TCO
- Makes hosting/outsourcing less complex re. licensing and software upgrades
- Allows complete and simple USG ownership/transfer
- Replication Costs Lower – Developers require copies!
  - Personal "sandbox"
  - Shared development server
  - Pre-production testing
  - Production server**S** (multiple load balanced)
- Ability to experiment / to learn without high costs
- Less demanding hardware requirements / security

Questions & Answers

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BTW - Latest launch Oct. 16 – fully dynamic – content expert managed via secure log-in – Python/Zope – fully outsourced.

WWW.DisabilityInfo.gov